

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in view of the present amendment and in light of the following discussion, is respectfully requested.

Claims 1, 3-20, and 37 are pending. In the present amendment, Claims 1 and 37 are amended. Support for the present amendment can be found in the original specification, for example, at page 104, line 7 to page 108, line 9 and in Figures 8 and 9. Thus, it is respectfully submitted that no new matter is added.

In the outstanding Office Action, Claims 1, 3-7, 10-12, 19, and 37 were rejected under 35 U.S.C. §103(a) as unpatentable over Bassereau (U.S. Patent No. 2,446,403); and Claims 1 and 3-20 were rejected under 35 U.S.C. §103(a) as unpatentable over Tejima et al. (Japanese Publication No. 09-248549, hereinafter “Tejima”).

In response to the outstanding rejections under 35 U.S.C. §103(a), Applicants respectfully request reconsideration of these rejections and traverse these rejections, as discussed below.

Amended Claim 1 recites:

A treatment apparatus, comprising:

a first hermetic chamber having a first opening;

a first hermetic door, placed outside the first hermetic chamber, capable of opening and closing the first opening;

a tube having a second opening on an end of the tube, a third opening, and an end facing the first hermetic chamber, capable of being inserted into the first opening, which shields the first hermetic door from the first hermetic chamber such that the first hermetic door is positioned between the second opening and the third opening when the tube is inserted into the first opening;

an exhaust system having an exhaust opening, the third opening of the tube being positioned opposed to the exhaust opening when the tube is inserted into the first opening, the exhaust system being configured to exhaust the first hermetic chamber via the second opening, the third opening, and the

exhaust opening when the tube is inserted into the first opening;
and

a cooling section configured to cool the tube when the
exhaust system exhausts the first hermetic chamber to perform
condensation in the tube,

wherein the first hermetic door is disposed between the
first opening and the cooling section.

In the treatment apparatus recited in Claim 1, when the tube is inserted into the first opening of the first hermetic chamber, the hermetic door is positioned between the two openings of the tube. Thus, when the tube is inserted into the first opening of the hermetic chamber, the tube shields a first hermetic door from the first hermetic chamber such that condensation of the vaporized metal from the object to be treated at the seal portion of the hermetic door can be prevented.¹ Additionally, in the treatment apparatus recited in amended Claim 1, the first hermetic door is disposed between the first opening and the cooling section. Thus, when the first hermetic door is closed, the cooling section is shielded from the radiation heat from the first hermetic chamber.

Bassereau describes a furnace 1 and a condenser 4a that can be positioned on an outlet of the furnace 1 that allows metallic vapors from the furnace 1 to be condensed in the condenser 4a.² Additionally, Bassereau describes that the condenser 4a can be moved away from the furnace opening and positioned behind a closure 9.³ The Office Action, in section 3 on page 3, equates the condenser 4a described in Bassereau to the claimed tube.

However, it is respectfully submitted that Bassereau does not disclose or suggest “a tube...which shields a first hermetic door from the first hermetic chamber such that the first hermetic door is positioned between the second opening and the third opening when the tube is inserted into the first opening,” as recited in amended Claim 1.

¹ See the specification, at page 106, line 20 to page 107, line 8.

² See Bassereau, at column 1, lines 1-6 and column 3, lines 61-69.

³ See Bassereau, at column 4, lines 19-42.

Instead, as can be seen in Figure 1 of Bassereau, when the condenser 4a is inserted into an opening of the furnace 1, the closure 9 is not located *between* an opening of the closure 4a into the furnace and the opening 4c at the other end of the condenser 4a. Thus, it is not the condenser 4a described in Bassereau that shields the closure 9 from the vaporized substances exhausted from the furnace 1. Thus, it is respectfully submitted that the condenser 4a described in Bassereau is not the claimed tube.

The outstanding Office Action asserts that “it would have been obvious for one of ordinary skill in the art at the time the invention was made to position the first hermetic door 9 at other suitable locations beyond the range of vapors (such as the claimed location between the second and third openings of the tube 4a when insertion is completed) in the apparatus of Bassereau.” However, lines 43-48 of Bassereau describe that, due to the *spacing apart* of the sealing means and the furnace, the sealing means may easily be cooled and may consequently comprise materials suitable for ensuring complete fluid-tightness, but which would not resist high temperatures. Thus, Bassereau explicitly teaches away from moving the closure 9 to a location between the openings of the condenser 4a when the condenser 4a is inserted into the opening in the furnace 1.

Additionally, as can be seen in Figure 1 of Bassereau, the temperature regulating means 6 is provided between the furnace 1 and the closure 9. Thus, the closure 9 described in Bassereau does not prevent heat radiated from the furnace 1 to affect the temperature regulating means 6. Therefore, it is respectfully submitted that Bassereau does not disclose or suggest “the first hermetic door is disposed between the first opening and the cooling section,” as recited in amended Claim 1.

Bassereau describes that an outlet 7a permits the chamber 7 and the chambers cojoined to be evacuated.⁴ However, as can be seen in Figure 1 of Bassereau, the outlet 7a is

⁴ See Bassereau, at column 4, lines 30-33.

at a far side of the auxiliary chamber 7, whereas the opening 4c in the condenser 4a is located in the hood 5. Thus, the exhaust vapors would have to travel the length of the auxiliary chamber 7 to reach the outlet 7a.

Therefore, it is respectfully submitted that Bassereau does not disclose or suggest “an exhaust system having an exhaust opening, the third opening of the tube being positioned opposed to the exhaust opening when the tube is inserted into the first opening, the exhaust system being configured to exhaust the first hermetic chamber via the second opening, the third opening, and the exhaust opening and the tube is inserted into the first opening,” as recited in amended Claim 1.

Instead, as clearly can be seen in Bassereau, the opening 4c in the condenser 4a is ***not opposed*** to the outlet 7a in the auxiliary chamber 7. Further, it is respectfully submitted that interpreting the opening 7a and the opening 4c as being opposed to each other when they are not near each other is beyond the broadest reasonable interpretation of Claim 1 consistent with the specification. See M.P.E.P. §2111.

The Office Action, on pages 4 and 5 states that “Bassereau ...is silent as to the exhaust opening 7a being positioned opposite to the third opening 4c when the tube is inserted into the first opening.” Further, the outstanding Office Action asserts that “it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to shift the location of the exhaust opening 7a in the apparatus of Bassereau, such that it faced the third opening 4c when the tube 4a was inserted into the first opening.” However, if the opening 7a described in Bassereau were moved to be opposite the opening 4c, then the opening 7a would be positioned in the hood 5 such that vapors in the furnace 1 would have a direct path to the opening 7a even when the condenser 4c were removed and the closure 9 were closed. Thus, the furnace would not have an airtight seal and the reduction of the ore and the condensation of the metallic vapors would not be carried out in an airtight vacuum.

As a result of the modification, the process apparatus described in Bassereau would be rendered unsatisfactory for its intended purpose. See M.P.E.P. §2143.01(V).

Therefore, it is respectfully submitted that Bassereau does not disclose or suggest every feature recited in amended Claim 1. Thus, it is respectfully requested the outstanding rejection of Claim 1, and all claims dependent thereon, as unpatentable over Bassereau be withdrawn.

Claim 37 recites features similar to those discussed above with respect to Claim 1. Thus, for at least the reasons discussed above with respect to Claim 1, it is respectfully submitted that Claim 37 patentably defines over Bassereau.

With regard to the obviousness rejection based on the combination of Tajima and Bassereau, the Office Action notes that “Tajima is silent as to the recovery means comprising the instantly claimed structure of a tube,” but instead relies on the disclosure of Bassereau in rejecting the claimed tube. However, for the reasons discussed above with respect to Claim 1, Bassereau does not disclose or suggest the tube recited in Claim 1.

Additionally, the outstanding Office Action, on page 11, states that the combination of Tajima and Bassereau “is further silent as to the claimed placement of the exhaust opening at a position opposite to the third opening of the tube when the tube is inserted into the first opening.” However, as Figure 6 of Tajima shows that the exhaust system 606 is connected to a rear wall of the condensing chamber 605, without the positioning of the door as described in the present application, positioning the exhaust system 606 opposite to an opening of the condenser would render the treating system described in Tajima unsatisfactory for its intended purpose, as described above with respect to Bassereau.

Therefore, even assuming the combination of Tajima and Bassereau to be proper, it is respectfully submitted that this combination does not disclose or suggest every feature recited in amended Claim 1. Thus, it is respectfully requested that the outstanding rejection of Claim

1, and all claims dependent thereon, as unpatentable over Tajima in view of Bassereau be withdrawn.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. A Notice of Allowance is earnestly solicited.

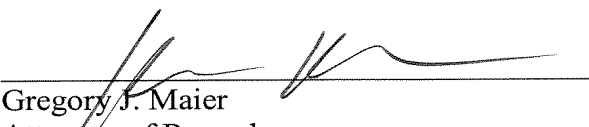
Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

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